

Serial No. 09/704,761
Amdt. dated April 5, 2004
Reply to Office Action of November 5, 2003

Docket No. IK-011

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A glass touch sensing circuit, comprising:
- a touch sensor which provides a signal in response to a user's touch;
 - a switch having a switching period of time differently determined depending on a level of the touch sensor signal;
 - a compensator which ~~adjusts a~~ produces an independent temperature reference signal ~~for~~ corresponding to a variation in temperature of the glass touch sensing circuit, compares an output signal from said switch proportional to the touch sensor signal with that of the ~~adjusted~~ independent temperature reference signal, and outputs a wave-shaped signal in accordance with a compared result; and
 - a touch detector responsive to an output signal from said compensator for detecting whether the user touched said touch sensor.

2. (Previously Presented) A glass touch sensing circuit as set forth in claim 1, further comprising:

a charging/discharging unit which charges and discharges a voltage which is different in level according to whether the user touches said touch panel, said switching time period of said switch determined depending on a level of said voltage charged and discharged by said charging/discharging unit.

3. (Previously Presented) A glass touch sensing circuit as set forth in claim 1, wherein said touch detector includes:

a signal output unit which provides an output signal synchronously with said output signal from said compensator; and

a recognition unit which recognizes a touched key in response to the output signal from said signal output unit.

4. (Previously Presented) A glass touch sensing circuit as set forth in claim 3, wherein said recognition unit recognizes an input of said touched key and initializes said signal output unit.

5. (Previously Presented) A glass touch sensing circuit as set forth in claim 1, wherein said touch detector includes:

a flip-flop having a clock terminal connected to an output terminal of said compensator, said flip-flop being enabled in response to a clock signal applied to said clock terminal; and

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a processor having an input terminal connected to an output terminal of said flip-flop, said processor recognizing the user's touch with said touch sensor in response to an output signal from said flip-flop and initializing said flip-flop.

6. (Previously Presented) A glass touch sensing circuit as set forth in claim 1, wherein said compensator includes a thermistor which compensates for the level of said reference signal for the temperature variation.

7. (Previously Presented) A glass touch sensing circuit as set forth in claim 6, wherein said compensator further includes:

a comparator having a first input terminal connected to an output terminal of said switch, and a second input terminal for inputting a voltage determined in level by said thermistor and fixed resistors.

8. (Previously Presented) A glass touch sensing circuit as set forth in claim 1, wherein said switch includes a transistor which turns on in response to said output signal from said touch sensor.

9. (Previously Presented) A glass touch sensing circuit as set forth in claim 5, wherein said flip-flop is a D flip-flop.

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10. (Currently Amended) A touch sensing system, comprising:
an input terminal for receiving a signal output from a touch sensor; and
a controller which processes the signal from the touch sensor based on an independent temperature reference signal corresponding to a variation in temperature to generate a touch detection signal.

11. (Previously Presented) A touch sensing system as set forth in claim 10, wherein the controller processes the signal from the touch sensor in a manner which achieves a constant level of touch detection sensitivity in spite of temperature variation.

12. (Previously Presented) A touch sensing system as set forth in claim 10, wherein the controller includes:

a switch which outputs a switch signal based on the signal from the touch sensor;
and

a compensator which compensates for variations in the switch signal based on temperature variation.

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mt 13. (Previously Presented) A touch sensing system as set forth in claim 10, wherein the controller includes:

a switch which outputs a switch signal based on the signal from the touch sensor;
and

a signal generator which generates a reference signal; and
a comparator which compares the switch signal to the reference signal,
wherein the controller generates the touch detection signal based on an output of the comparator.

14. (Previously Presented) The touch sensing system as set forth in claim 13, wherein the signal generator includes a level-controller which controls a level of the reference signal based on temperature variation.

15. (Previously Presented) The touch sensing system of claim 14, wherein the level-controller varies the level of the reference signal to coincide with changes in the switch signal that result from variation in temperature.

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16. (Previously Presented) A touch sensing system as set forth in claim 14, wherein the level-controller decreases the level of the reference signal to a first non-zero value as temperature increases, and increases the level of the reference signal to a second non-zero value as temperature decreases.

17. (Previously Presented) A touch sensing system as set forth in claim 14, wherein the level-controller includes a thermistor which outputs a voltage value that varies the level of the reference value based on temperature variation of the touch sensing system.

18. (Currently Amended) A touch sensing system, comprising:
a switch which outputs a switch signal based on a touch sensor signal; and
a controller which compensates for variations in a turning-on period of the switch
~~in order to generate a touch detection signal~~ by comparing an independent temperature reference signal corresponding to a variation in temperature with the switch signal output from the switch.

19. (Previously Presented) A touch sensing system as set forth in claim 18, wherein the controller compensates for variations in falling edge depth of the switch signal output from the switch.

20. (Previously Presented) A touch sensing system as set forth in claim 18, wherein the controller includes:

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a comparator for comparing the switch signal to a reference signal to generate a compensated switch signal, wherein the controller generates the touch detection signal based on the compensated switch signal.

21. (Previously Presented) A touch sensing system as set forth in claim 20, wherein the controller includes:

a compensator which varies the reference signal based on temperature variations.

22. (Previously Presented) A touch sensing system as set forth in claim 21, wherein the compensator includes a thermistor which outputs a value for varying the reference signal based on temperature variations.

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23. (Previously Presented) A touch sensing system as set forth in claim 20, wherein the controller includes:

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a flip-flop circuit having an input connected to the output of the comparator and an output for supplying the touch detection signal, wherein the compensated switch signal is input into a clock terminal of the flip-flop.
